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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,102	06/30/2003	Krishna Rao Boyapati	132479	9234

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
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1764

MAIL DATE	DELIVERY MODE
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07/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/609,102	Applicant(s) BOYAPATI ET AL.	
	Examiner <i>DR</i> Basia Ridley	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 recites the limitation(s) "said synthesis gas". There is insufficient antecedent basis for said limitation in the claim.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avery (USP 4,476,249) in view of Wolf (WO 01/38456).

Regarding claims 22, 30-31 and 37, Avery discloses a system for co-producing hydrogen and electrical power comprising:

- an energy generating system (20) for generating energy from an intermittent renewable energy source;
- a production system (16) in energy communication with said energy generating system (20) for producing hydrogen and oxygen;
- a hydrogen-delivery system in fluid communication with said production system (16) for receiving at least a portion of said hydrogen from said production system (Fig. 1); said hydrogen-

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delivery system further configured to channel at least a portion of said hydrogen to at least one of a power generation system or a hydrogen storage system (Fig. 1); or

- a hydrogen-delivery system in fluid communication with said production system (16) for receiving at least a portion of said hydrogen from said production system (Fig. 1); said hydrogen-delivery system further configured to channel at least a portion of said hydrogen to at least one of a power generation system (Fig. 1); and
- an oxygen delivery system in fluid communication with said production system (16) for receiving at least a portion of said oxygen from said production system (16);
- said oxygen delivery system further configured to channel at least a portion of said oxygen to a gasification system (10);
- wherein said gasification system (10) is further configured to channel at least a portion of a synthesis gas to said power generation system (Fig. 1).

While Avery does disclose that said gasification system gasifies coke, the reference does not disclose said coke being obtained from biomass.

Wolf teaches the system for gasification of coke obtained from biomass by use of oxygen obtained from a production system in energy communication with an energy generating system for generating energy from an intermittent renewable energy source (Fig. 1, abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to use coke obtained from biomass in the system of Avery, as taught by Wolf, since doing so would amount to nothing more than a use of a known material for its intended use in a known environment to accomplish entirely expected result.

Regarding claims 23-28, 32-36 and 38-42, Avery in view of Wolf disclose all of the

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claim limitations as set forth above. Additionally Avery discloses the system further comprising:

- a hydrogen-reforming system (12) for reforming said hydrogen from at least a portion of said synthesis gas; wherein said hydrogen-reforming system (12) is further configured to channel said hydrogen from said hydrogen-reforming system to said hydrogen-delivery system (Fig. 1);
- wherein said power generation system comprises a hydrogen-based electricity production system (28);
- wherein said hydrogen-based electricity production system (28) comprises at least one of fuel cell-based electricity production system or a micro-turbine-based electricity production system or an internal combustion engine-based electricity production system or a combination thereof (Fig. 1);
- wherein said intermittent renewable energy comprises at least one of wind energy or solar energy or tidal energy (abstract);
- wherein said energy comprises at least one of thermal energy or electrical energy (abstract);
- wherein said production system is selected from the group consisting of an electrolysis system, a thermal splitting system, an electro-thermal splitting system, a thermo-chemical splitting system, a photo-chemical splitting system, a photo-electrochemical splitting system and combinations thereof (abstract).

Regarding claim 29, while Avery does not explicitly disclose any specific design of said gasifier, said gasifier would, inherently comprises at least one of a fixed bed gasification system or a fluidized bed gasification system.

Regarding limitations recited in claims 22-42 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article

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worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

6. Applicant's arguments filed 7 June 2007 have been fully considered but they are not persuasive.

7. The applicant argues that Avery does not disclose intermittent renewable energy source because OTEC is not intermittent, and further OTEC can not be equated with tidal energy. This is not found persuasive. An ordinary skilled artisan would refer to OTEC as intermittent renewable energy source (see USP 4,982,569, claims 11-13). Further, the examiner has not likened tidal energy with OTEC, but since OTEC uses solar energy (see Avery, C2/L49-60).

8. The applicant argues that Avery does not describe power generation or storage system using hydrogen, and that hydrogen is not channeled to a power generation system but to a

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catalytic converter. This is not found persuasive. The rejected claims do not exclude systems wherein hydrogen is converted in any in the hydrogen delivery system before being channeled to at least one of a power generation system of hydrogen storage system, as the claimed transitional term "comprising" permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

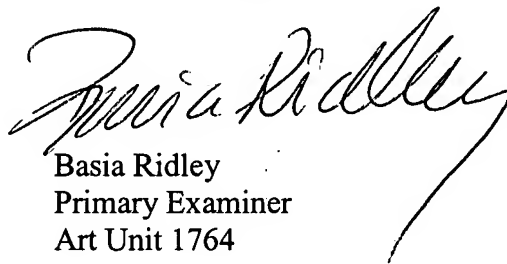
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

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The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Basia Ridley
Primary Examiner
Art Unit 1764

BR
July 9, 2007